

## ABSTRACT

A temperature controller and temperature control element, whose plate-surface temperature distribution is highly homogeneous, which can be used in a waveguide type optical module. In a waveguide type optical module a temperature control element is supported on a pedestal inside a casing and an optical waveguide is mounted on the temperature control element. The temperature control element includes a plate having a heater or heat absorber provided on the non-heating side thereof or buried therein. The pedestal is provided to support the plate mainly in contact with the non-heating side of the plate. A total area of contact of the pedestal with the plate including an area of contact with the heater or heat absorber is set to over 30% of the area of the non-heating side of the plate and a sum of surface roughness of the pedestal and those of both the plate and heater is set to over  $0.05\ \mu\text{m}$ .